

Claims

1. Plastic welding machine, especially a hot air or heating wedge welding machine, for
5 connecting in substance at least two said layers (38, 39; 43, 44; 48-50), wherein the said
welding machine (1) contains said welding tools (7), at least one pair of said drive rollers (8,
9) each, as well as a said electronic control device (2) comprising a said computer (3) for
controlling the temperature of the said welding tools (7) and for setting and regulating the
pressure of the said drive rollers (8, 9), with the features:
10
 - a) The said electronic control device (2) has at least one said memory (35), into which a
process program can be loaded, which controls the welding of the said two layers
(38, 39; 43, 44; 48-50) section by section, wherein primary welding parameters,
which are preset by the said process program at the beginning of the said particular
15 welding section (40-42; 45-47; 52-54) and are characteristic of the given section,
such as the temperature of the said welding tools (7) or of the particular welding
medium, the velocity of feed of the said two drive rollers (8, 9) or of one of the said
two drive rollers, the roller pressing pressure, are set;
 - b) the said welding machine (1) comprises a path measuring system, which is connected to the
20 said electronic control device (2) for determining the path section of the said layers
(38, 39; 43, 44; 48-50) welded together during the welding operation, and

c) the said electronic control device (2) is designed such that it performs a comparison between the measured path section of the said particular layers (38, 39; 43, 44; 48-50) welded together and a preset value characterizing the beginning of the said next welding section (40-42; 45-47; 54-54), and that it sets the welding parameter characteristic of the said corresponding new welding section (40-42; 45-47; 52-54) in case of agreement between the measured value and the preset value.

2. Plastic welding machine in accordance with claim 1, **characterized in that** the path measuring system comprises at least one said tachometer generator (22, 23).

3. Plastic welding machine in accordance with claim 1, **characterized in that** a said sensor, which scans said marks that define the said individual welding sections and are arranged on the material to be welded, is provided as the distance measuring system.

4. Plastic welding machine in accordance with claim 1, **characterized in that** the said two drive rollers (8, 9) can be driven at different speeds of rotation.

5. Plastic welding machine in accordance with one of the claims 1 through 4, **characterized in that** the said control device (2) comprises a said memory, in which data that can be displayed on a said display screen (5) of the said welding machine (1) and show comments and/or settings of the said welding tools (7) that are associated with the particular current welding program can be stored.

6. Plastic welding machine in accordance with claim 5, **characterized in that** the said control device (2) comprises a said memory (36), which contains secondary roller and welding tool parameters, which can be set by the process program before the start of the welding operation and remain effective for the entire welding operation comprising a plurality of said welding sections (40-42; 45-47; 52-54).